

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-32, 34, 35, 37-39, 41, 42, 44-63, 65-67, 69-72 are pending in the application, with claims 1, 7, 8, 10, 16, 22, 23, 26, 39 and 55 being the independent claims. Claims 33, 36, 40, 43, 64, and 68 are sought to be cancelled without prejudice to or disclaimer of the subject matter therein. New claims 71 and 72 are sought to be added. These changes are believed to introduce no new matter.

Based on the above amendment and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Double Patenting

The Examiner has provisionally rejected claims 1-70 on the grounds of nonstatutory double patenting over claims of co-pending U. S. Patent Application Ser. No. 10/809,685 to Kolze, et al., asserting that the claims, if allowed, would improperly extend the right to exclude already granted in the patent.

Applicants will address the provisional double patenting rejection in the event it is converted to an actual double patenting rejection when the co-pending application is permitted to issue.

Rejections under 35 U.S.C. § 102

On pages 5-7 of the Office Action, claims 1-3, 16-18, 25, 33, 34, 36, 37, 39-46, 54-56, 63-65, 67 and 68 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,771,590 to Marchok et al. ("Marchok"). Applicants respectfully traverse.

Marchok fails to disclose each and every element of the rejected claims for at least the following reasons. For example, Marchok does not disclose all elements of claim 1, which was amended to correct matters of form. Claim 1, as amended, recites:

...
receiving a first signal from the central entity;
...
upon a loss of reception of the first signal, maintaining the symbol clock to generate a maintained symbol clock;
receiving a second signal from the central entity;
determining a symbol clock offset between the first signal and the second signal using the maintained symbol clock; and
adjusting the maintained symbol clock based on the symbol clock offset to generate an adjusted symbol clock.

For example, Marchok does not disclose "determining a symbol clock offset between the first signal and the second signal using the maintained symbol clock" and thus does not disclose "adjusting the maintained symbol clock based on the symbol clock offset."

Although Marchok discusses that "[d]ifferences between the values of the first parameter among the recovered pilot sub-symbols are repetitively calculated," Marchok does not determine a symbol clock offset between "a first signal from the central entity" and "a second signal from the central entity" as recited in the claims. Instead, Marchok calculates "differences between the values of the first parameter among the recovered pilot sub-symbols." (Marchok 3:29). Nowhere does Marchok discuss these recovered sub-symbols as being from a first signal and a second signal.

On the contrary, Marchok determines a frequency offset or phase difference between sub-symbols in the same signal. Marchok discusses performing a “warm start-up,” i.e., when re-establishing communications after “a brief period of disruption.” During this warm start up, a search mode may be skipped and the receiver may proceed directly to the acquisition mode. (Marchok, col. 7, lines 20-26). During acquisition mode, the receiver “measures the phase difference between consecutive pilot tone sub-symbols to adjust the timing of the output of the voltage controlled oscillator 240 so that it is within a frequency range sufficient for subsequent phase locked loop processing of the pilot tone signal.” (Marchok, 6:45-60; *see also* 2:44-50; 3:22-28). Thus, any determined frequency offset or phase difference is not between a first signal and a second signal, but among consecutive pilot tone symbols of the same signal.

For at least these reasons, independent claim 1 is patentable over Marchok. Reconsideration and allowance of claim 1 is respectfully requested. Claims 2, 3 and 34 depend from claim 1. For at least the above reasons, and further in view of their own features, dependent claims 2, 3, and 34 are patentable over the cited reference. Reconsideration and withdrawal of the rejections are therefore respectfully requested.

Independent claims 16, 39 and 55 are patentable for reasons similar to those presented above in regard to claim 1. Claims 17, 18, 25 and 37 depend from claim 16; claims 41, 42, 44-46 and 54 depend from claim 39; and claims 56 and 63 and 65-67 depend from claim 55. For at least the above reasons, and further in view of their own features, dependent claims 17, 18, 25, 37, 41, 42, 44-46, 54, 56, 63, 65 and 67 are patentable over the cited reference. Claims 33, 36, 40, 43, 64, and 68 were cancelled,

rendering rejection of these claims moot. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections.

New claim 71 depends from claim 1. For at least the reasons above, and further in view of its own features, dependent claim 71 is patentable over the cited reference. Accordingly, Applicants respectfully request consideration and allowance of claim 71.

Rejections under 35 U.S.C. § 103

On page 9, claims 35, 38, 47, 66, and 70 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,771,590 to Marchok et al. (“Marchok”) in view of U.S. Patent Application Publication No. 2001/0055319 to Quigley et al. (“Quigley”). Applicants respectfully traverse.

As described above, Marchok does not disclose or suggest “determining a symbol clock offset between the first signal and the second signal using the maintained symbol clock” or “adjusting the maintained symbol clock based on the symbol clock offset.”

Quigley fails to overcome this deficiency in Marchok. Quigley discloses a second message receiving a slot timing offset (Quigley, paragraph [0009]); a fractional symbol time loop which determines a fractional symbol timing offset (Quigley, paragraphs [0132], [0200] - [0208]), with the fractional symbol timing offset defined as “a precise modification to slot timing” and which is determined when “acquiring a data packet” using a phase locked loop (Quigley, paragraphs [0200], [0203], [0204]; and use of a fractional symbol timing feedback loop to determine the fractional symbol timing using the binary pattern of the preamble. (Quigley, paragraphs [0210], [0212]). In short, Quigley discloses “enhanced data packet acquisition” which includes “fast clock phase

recovery” using at least one phase locked loop. (Quigley, paragraphs [0132] [0205]-[0210]). Nowhere does Quigley teach or suggest “determining a symbol clock offset between the first signal and the second signal using the maintained symbol clock” or “adjusting the maintained symbol clock based on the symbol clock offset” as recited in claim 1.

Thus, for at least these reasons, independent claims 1, 16, 39, and 55 are patentable over the cited references. Claim 35 depends from claim 1; claim 38 depends from claim 16, claim 47 depends from claim 39, and claims 66 and 70 depend from claim 55. Thus claims 35, 38, 47, 66, and 70 are patentable over the cited references for the same reasons and further in view of their own features. Reconsideration and withdrawal of the rejections are therefore respectfully requested.

On page 9, claims 4-6, 9, 10, 19-21, 24, 26, 32, 48-50, 53, 57-59, 62, and 69-70 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,771,590 to Marchok et al. (“Marchok”) in view of U.S. Patent No. 6,356,555 (“Rakib”). Applicants respectfully traverse.

Without acquiescing to the propriety of the rejection, Applicants have amended claim 10. Independent claim 10 as amended recites:

...
storing calibration information relating to a timing difference between the first signal and a second signal transmitted from the central entity;
upon a loss of reception of the first signal, maintaining the symbol clock;
accessing the calibration information;
determining a symbol clock offset between the first signal and the second signal based on the calibration information; and
adjusting the symbol clock based on the symbol clock offset.

For at least the reasons discussed above, Marchok does not disclose “determining a symbol clock offset between the first signal and the second signal” or “adjusting the symbol clock based on the symbol clock offset.” Further, Marchok does not disclose “storing calibration information . . .” as recited in the claims. Rakib fails to remedy these deficiencies in Marchok.

On the contrary, Rakib discloses implementing a time delay into the data stream.

Data is read out of memory 300 at the same rate at which it was stored, but starting at some programmable time after the data is stored, thereby implementing the variable delay needed to maintain frame synchronization with the CU frame timing. This programmable delay Td is set by the difference in addresses between the address stored in a receive frame counter (read pointer) and the address stored in a transmit frame counter 324 in FIG. 15 (write pointer).

* * *

The value of Td is varied on a trial and error basis during the synchronization process until the gap is hit and the CU sends a message to whatever RU is synchronizing telling it to freeze Td at the value that caused the gap to be hit by the barker code.

(Rakib, 45:30-67). Thus, Rakib stores data, not calibration information. Further, Rakib’s time delay (Td) is equal to “the span of the network” which is “the total turnaround propagation time for a signal to propagate from the CU to the farthest RU.” (Rakib, 24:46), and not a timing difference between a first signal and a second signal. Therefore, Rakib does not teach or suggest “storing calibration information relating to a timing difference between the first signal and a second signal transmitted from the central entity.”

Further, nowhere does Rakib teach or suggest “determining a symbol clock offset between the first signal and the second signal” or “adjusting the symbol clock based on the symbol clock offset.”

For at least these reasons, independent claim 10 is patentable over Marchok in view of Rakib. For similar reasons, independent claim 26 is patentable over Marchok in view of Rakib. Independent claims 1, 16, 39, and 55 are patentable over Marchok for at least the reasons listed under the § 102 section above. Rakib does not remedy the above-discussed deficiencies in Marchok, or add anything to Marchok that would have made obvious the claimed invention. Therefore, independent claims 1, 16, 39, and 55 are patentable over Marchok in view of Rakib.

Claims 4-6 and 9 depend from claim 1; claims 19-21 and 24 depend from claim 16; claims 48-50 and 53 depend from claim 39; and claims 57-59, 62, 69, and 70 depend from claim 55. Therefore claims 4-6, 9, 19-21, 24, 48-50, 53, 57-59, 62, 69, and 70 and are believed allowable for the same reasons as their respective independent claims and further in view of their own features. Reconsideration and withdrawal of the rejections are therefore respectfully requested.

New dependent claims 71 and 72 depend from claims 1 and 10 respectively. For at least the reasons above, and further in view of their own features, dependent claims 71 and 72 are patentable over the cited references. Accordingly, Applicants respectfully request consideration and allowance of claims 71 and 72.

On page 11, claims 11-15 and 27-31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,771,590 to Marchok et al. ("Marchok") in view of U.S. Patent No. 6,356,555 ("Rakib") and further in view of U.S. Patent No. 6,243,369 to Grimwood et al. ("Grimwood"). Applicants respectfully traverse.

Independent claims 10 and 26 are patentable over Quigley and Rakib for at least the reasons listed above. Moreover, Grimwood does not remedy the above-discussed deficiencies in Marchok and Rakib, or add anything to Quigley and/or Rakib that would have made obvious the claimed invention. Dependent claims 11-15 and 27-31 depend from independent claims 10 and 26 respectively, and are believed allowable for the same reasons and further in view of their own features.

Reconsideration and withdrawal of the rejections are therefore respectfully requested.

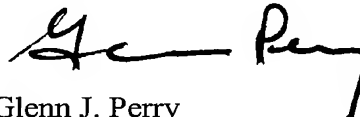
Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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Date: 10 April 2009

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